

CHAPTER 93  
MINIATURE BOILERS INSTALLED PRIOR TO SEPTEMBER 20, 2006

[Prior to 9/24/86, Labor, Bureau of [530]]  
[Prior to 1/14/98, see Labor Services[347] Ch 45]  
[Prior to 8/16/06, see 875—Ch 206]

**875—93.1(89) Scope.** This chapter sets forth requirements in addition to those contained in 875—Chapter 92 for boilers that:

1. Have a heating surface of 20 square feet or less;
2. Have a gross volume of 5 cubic feet or less, excluding casing and insulation;
3. Have an inside shell diameter of 16 inches or less;
4. Have 100 psig maximum allowable working pressure; and
5. Were installed prior to September 20, 2006.

For objects covered by this chapter, if there is a conflict between this chapter and Chapter 92, this chapter shall govern the issue.

**875—93.2(89) Codes adopted by reference.**

**93.2(1)** *Installations from March 31, 1967, to June 30, 1995.* Installations from March 31, 1967, to June 30, 1995, shall be designed, manufactured, installed, inspected, and stamped in accordance with the requirements of the ASME Code, Section I, for miniature boilers and inspected and stamped in accordance with the requirements of the National Board and the requirements of ANSI/ASME CSD-1 1992 with 1994 addenda.

**93.2(2)** *Installations from July 1, 1996, to December 31, 1997.* Installations and reinstallations from July 1, 1996, to December 31, 1997, shall be constructed and installed in accordance with national and international standards such as DIN, BSI, ASME, JIS, or CSA. Only national and international standards acceptable to the division of labor services may be utilized. Miniature boilers installed and reinstalled after January 1, 1996, must be inspected by a National Board commissioned inspector and be registered with the National Board. The boilers must comply with the requirements of ANSI/ASME CSD-1 1995.

**93.2(3)** *Installations from January 1, 1998, to December 31, 2000.* Installations and reinstallations from January 1, 1998, to December 31, 2000, shall be constructed and installed in accordance with national and international standards such as DIN, BSI, ASME, JIS, or CSA (1995 with 1997 addenda). Only national and international standards acceptable to the division may be utilized. The boilers must comply with the requirements of ANSI/ASME CSD-1 (1995 with 1997 addenda).

**93.2(4)** *Installations from January 1, 2001, to September 20, 2006.* Installations and reinstallations from January 1, 2001, to September 20, 2006, shall be constructed and installed in accordance with national and international standards such as DIN, BSI, ASME, JIS, or CSA (1998 with 1999 and 2000 addenda). Only national and international standards acceptable to the division may be utilized. The boilers must comply with the requirements of ANSI/ASME CSD-1 (1998 with 1999 addenda).

**875—93.3(89) Maximum working pressure.** The maximum allowed working pressure is to be determined by rule 875—92.4(89).

**875—93.4(89) Safety valves.** Boilers covered by this chapter shall be equipped with a sealed spring-loaded pop safety valve of not less than ½-inch pipe size. The minimum relieving capacity of the safety valve shall be determined in accordance with rule 875—92.7(89). In addition to these requirements, the safety valve shall have sufficient capacity to discharge all the steam that can be generated by the boiler without allowing the pressure to rise more than 6 percent above maximum allowable working pressure.

**875—93.5(89) Steam stop valves.** Each steam line from a miniature boiler shall be provided with a stop valve located as close to the boiler shell or drum as is practicable except when the boiler and steam receiver are operated as a closed system.

**875—93.6(89) Water gages.**

**93.6(1)** Miniature boilers for operation with a definite water level shall be equipped with a glass water gage for determining the water level. The lowest permissible water level for vertical boilers shall be at a point one-third of the height of the shell above the bottom head or tube sheet. When the boiler is equipped with an internal furnace, the water level shall not be less than one-third of the length of the tubes above the top of the furnace tube sheet. In the case of small boilers operated in a closed system where there is insufficient space for the usual glass water gage, water level indicators of the glass bull's eye type may be used.

**93.6(2)** Miniature boilers shall have the lowest visible part of the water gage glass located at least 1 inch above the lowest permissible water level specified by the manufacturer.

**875—93.7(89) Feedwater supply.**

**93.7(1)** Except for miniature boilers operating without the extraction of steam, miniature boilers shall be provided with at least one feed pump or other feeding device unless the boiler feed line is connected to a water main carrying sufficient pressure to feed the boiler. In the latter case, in lieu of a feeding device, a suitable connection or opening shall be provided to fill the boiler when cold. Such connection shall be no less than ½-inch pipe size for iron or steel pipe and ¼ inch for brass or copper pipe.

**93.7(2)** The feed pipe shall be provided with a check valve and a stop valve of a size not less than that of the pipe. The feed water may be delivered through the blowoff opening if desired.

**875—93.8(89) Blowoff.** Miniature boilers shall be equipped with a blowoff connection, not less than ½-inch pipe size, located to drain from the lowest water space practicable. The blowoff shall be equipped with a valve or cock not less than ½-inch pipe size.

**875—93.9(89) Washout openings.** Miniature boilers exceeding 12 inches internal diameter or having more than ten square feet of heating surface shall be fitted with not less than three brass washout plugs of 1-inch pipe size that shall be screwed into openings in the shell near the bottom. In miniature boilers of the closed type system heated by removable internal electric heating elements, the openings for these elements when suitable for cleaning purposes may be substituted for washout openings. Boilers not exceeding 12 inches internal diameter and having less than ten square feet of heating surface need not have more than two 1-inch openings for cleanouts, one of which may be used for the attachment of the blowoff valve; these openings shall be opposite each other where possible. All threaded openings shall be opposite each other where possible. All threaded openings in the boiler shall be provided with a riveted or welded reinforcement to give four full threads therein.

Electric boilers of a design employing a removable top cover flange for inspection and cleaning need not be fitted with washout openings.

**875—93.10(89) Fixtures and fittings.** All valves, pipe fittings, and appliances connected to a miniature boiler shall be equal to at least the minimal requirements of the construction or installation code, and rated for not less than the maximum allowable working pressure of the miniature boiler, and in no case will the rating be for less than 125 pounds.

These rules are intended to implement Iowa Code chapter 89.

[Filed 7/15/59; amended 5/4/67]

[Filed 5/6/83, Notice 3/30/83—published 5/25/83, effective 7/1/83]

[Filed emergency 6/13/83—published 7/6/83, effective 7/1/83]

[Filed emergency 4/4/86—published 4/23/86, effective 4/4/86]

[Filed emergency 9/5/86—published 9/24/86, effective 9/24/86]

[Filed 3/17/89, Notice 9/21/88—published 4/5/89, effective 5/10/89]

[Filed 10/25/91, Notice 7/10/91—published 11/13/91, effective 1/1/92]

[Filed 5/16/96, Notice 11/22/95—published 6/5/96, effective 8/1/96]

[Filed emergency 12/26/97 after Notice 11/19/97—published 1/14/98, effective 1/1/98]

[Filed 3/14/01, Notice 1/24/01—published 4/4/01, effective 5/9/01]

[Filed 7/26/06, Notice 5/10/06—published 8/16/06, effective 9/20/06]

[Filed 11/30/07, Notice 10/24/07—published 12/19/07, effective 1/23/08]